S.Q. TUBE

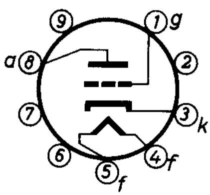
U.H.F. oscillator triode for frequencies up to 750 MHz.

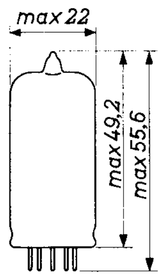
QUICK REFERENCE DATA			
Base	Noval. Gold plated pins		
Heating	Indirect A.C. or D.C.; parallel supply		
Heater voltage	V_f	6.3	V
Heater current	I_f	175	mA
Anode current	I_a	30	mA
Mutual conductance	S	5.5	mA/V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval





CAPACITANCES

Grid to all except anode	$C_{g(a)}$	1.8	pF
Anode to all except grid	$C_{a(g)}$	0.7	pF
Anode to grid	C_{ag}	1.6	pF
Grid to heater	C_{gf}	max. 0.25	pF
Cathode to heater	C_{kf}	2.3	pF

CHARACTERISTICS

Heater voltage	V_f	6.3		V
Heater current	I_f	175		mA
Anode voltage	V_a	120	150	V
Grid voltage	$-V_g$	2	2	V
Anode current	I_a	20	30	mA
Mutual conductance	S	4	5.5	mA/V
Amplification factor	μ	16	16	

OPERATING CHARACTERISTICS AND LIMITING VALUES

Operation as U.H.F. oscillator

A) Heater supply voltage	V_f	6.3		V
Series resistor in heater circuit	R	3		Ω
Wave length	λ	40	80	cm
Anode voltage	V_a	220	275	V
Anode current	I_a	18.6	17.2	mA
Grid current	$+I_g$	1.5	2.8	mA
Output power	W_o	0.6	2.1	W

LIMITING VALUES Design centre rating system

Anode voltage	V_{a_o}	max.	550	V
Anode voltage	V_a	max.	275	V
Anode dissipation	W_a	max.	3.5	W
Cathode current	I_k	max.	20	mA
Grid current	I_g	max.	7.5	mA
Negative grid voltage	$-V_g$	max.	100	V
Voltage between cathode and heater	V_{kf}	max.	100	V
Grid resistor	R_g	max.	1	MΩ

B) Heater supply voltage	V_f	6.3		V
Series resistor in heater circuit	R	3		Ω
Wave length	λ	40	80	cm
Anode voltage	V_a	290	300	V
Anode current	I_a	19.6	18.6	mA
Grid current	$+I_g$	0.4	1.5	mA
Output power	W_o	0.7	2.2	W

With these operating conditions the following limiting values should be strictly adhered to

LIMITING VALUES Design centre rating system unless otherwise specified.

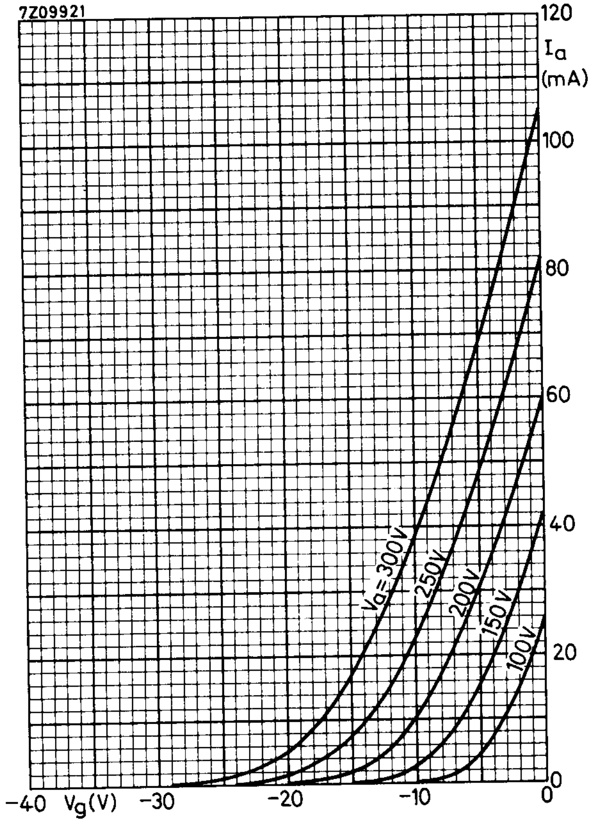
Anode voltage	V_{a_o}	max.	550	V
Anode voltage (stabilized ± 1%)	V_a	max.	300	V
Anode dissipation (Abs.max.)	W_a	max.	5	W
Cathode current	I_k	max.	20	mA
Grid current	I_g	max.	7.5	mA
Negative grid voltage	$-V_g$	max.	100	V
Voltage between cathode and heater	V_{kf}	max.	100	V
Grid resistor	R_g	max.	1	MΩ

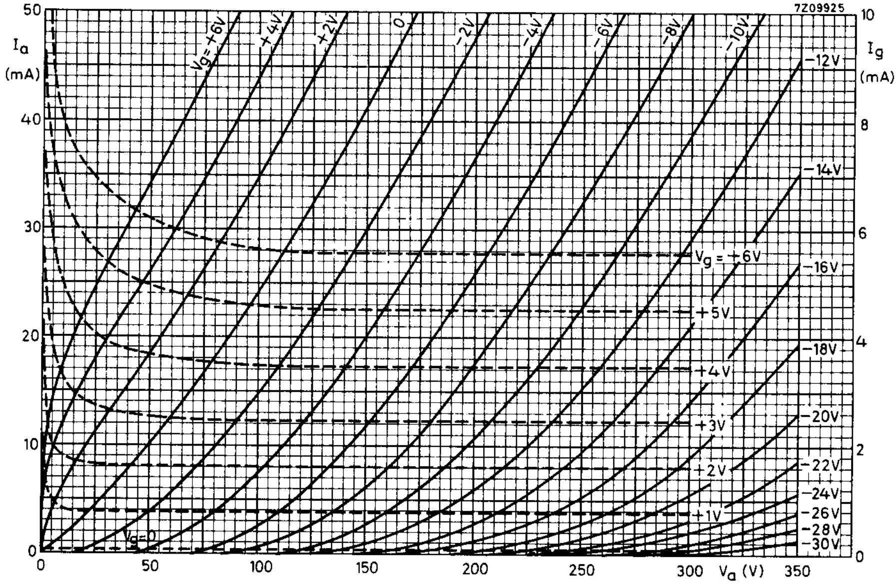
C) Heater voltage	V_f	6.3		V
Wave length	λ	40	80	cm
Anode voltage	V_a	220	300	V
Anode current	I_a	27.7	26.3	mA
Grid current	I_g	2.3	4	mA
Output power	W_o	1.1	3.8	W

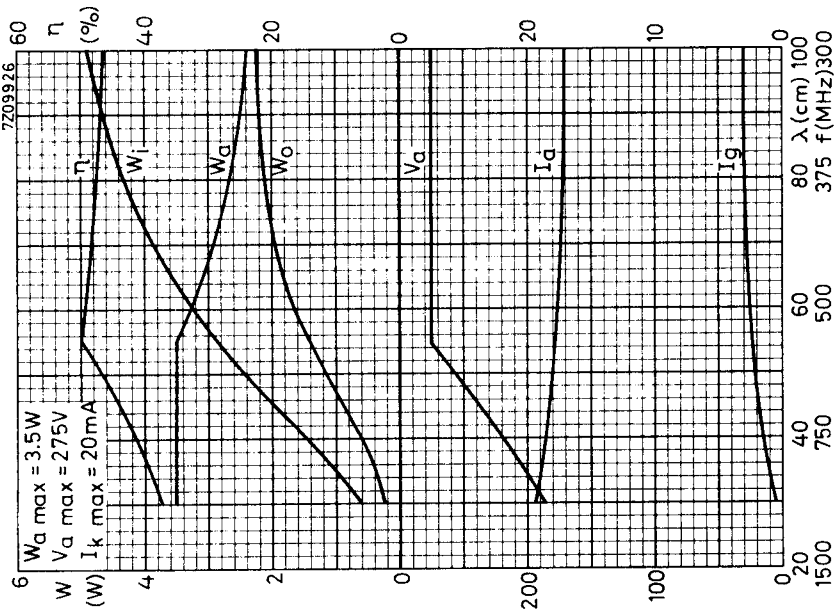
LIMITING VALUES Design centre rating system unless otherwise specified.

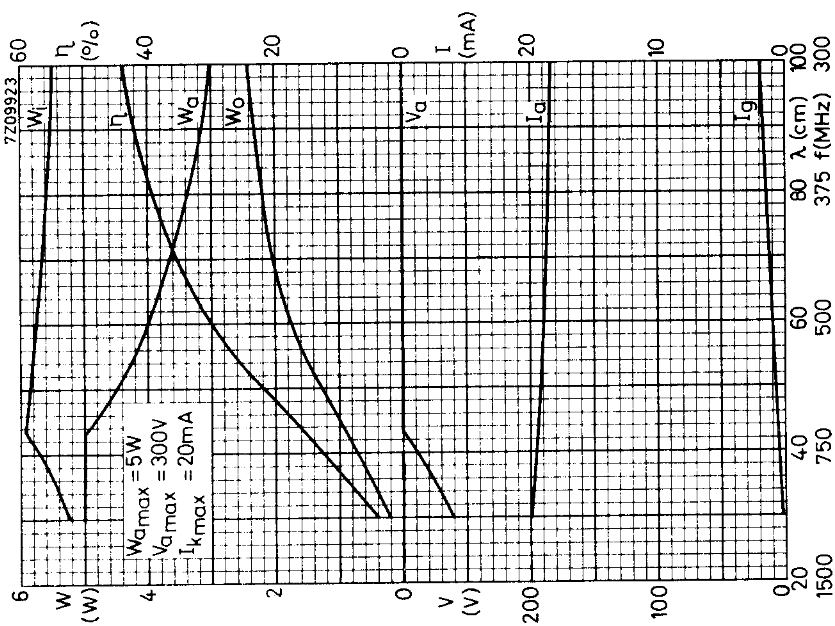
Anode voltage	V_{a_o}	max.	550	V
Anode voltage (stabilized ± 1%)	V_a	max.	300	V
Anode dissipation (Abs.max.)	W_a	max.	5	W
Cathode current (Abs.max.)	I_k	max.	30	mA
Grid current	$+I_g$	max.	7.5	mA
Grid voltage	$-V_g$	max.	100	V
Voltage between cathode and heater	V_{kf}	max.	100	V
Grid resistor	R_g	max.	1	MΩ

Heater voltage: The average heater voltage should be 6.3 V
Variation of the heater voltage should not exceed the range the range of 6.3 V ± 3%.

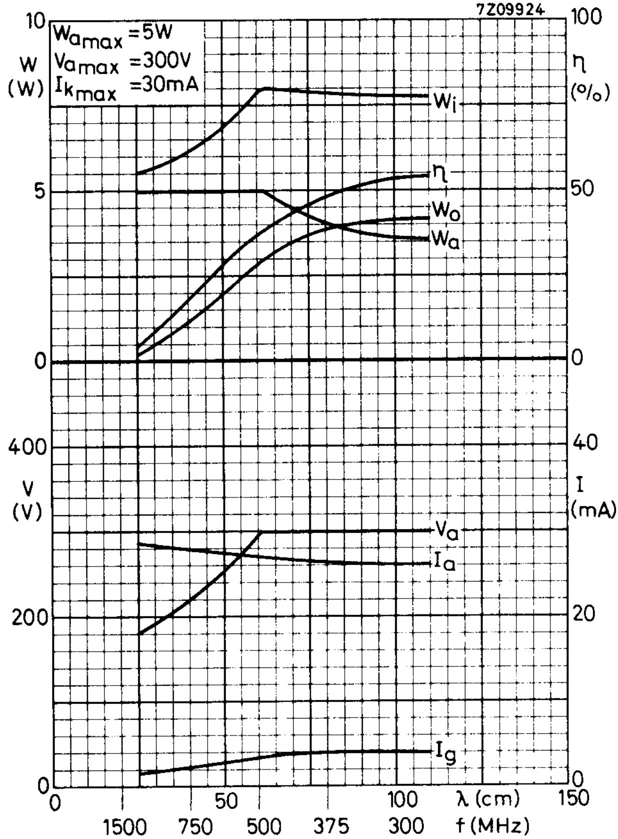

7Z09921
120
I_a
(mA)
100
80
60
40
20
0
V_a=300V
250V
200V
150V
100V
−40
V_g(V)
−30
−20
−10
0

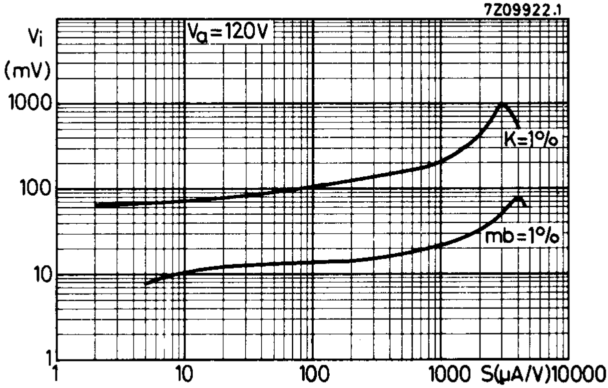

7Z09925
I_a (mA)
I_g (mA)
V_g = +6V
+4V
+2V
0
−2V
−4V
−6V
−8V
−10V
−12V
−14V
−16V
−18V
−20V
−22V
−24V
−26V
−28V
−30V
V_g = +6V
+5V
+4V
+3V
+2V
+1V
V_g=0
V_a (V)
0
50
100
150
200
250
300
350
10
20
30
40
50
2
4
6
8
10

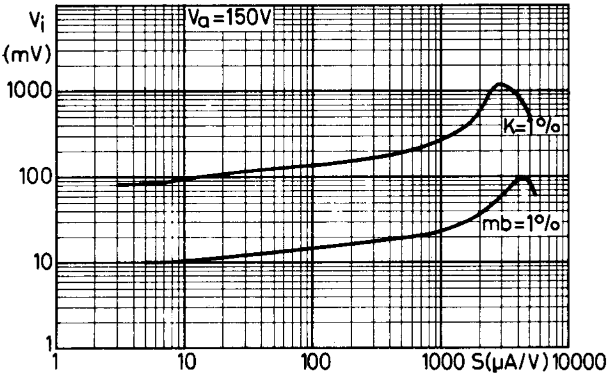




December 1968


7Z09924
$W_{a\,max}$ = 5W
$V_{a\,max}$ = 300V
$I_{k\,max}$ = 30mA
W
(W)
η
(%)
W_i
η
W_o
W_a
V
(V)
I
(mA)
V_a
I_a
I_g
10
5
0
400
200
0
100
50
0
40
20
0
0
50
100
150
λ (cm)
1500
750
500
375
300
f (MHz)


7Z09922.1
V_i
(mV)
1000
100
10
1
V_a=120V
K=1%
mb=1%
1
10
100
1000
S(μA/V)
10000


V_i
(mV)
1000
100
10
1
V_a=150V
K=1%
mb=1%
1
10
100
1000
S(μA/V)
10000

PHILIPS

Data handbook

PHILIPS

Electronic components and materials

EC81

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3	3	1968.12
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5	5	1968.12
6	6	1968.12
7	7	1968.12
8	8	1970.01
9	FP	2001.04.13